

A MODERN REVIEW OF THE DEMISE OF  
*HECATERA DYSODEA* D. & S.:  
THE SMALL RANUNCULUS

By COLIN PRATT\*

(concluded from page 118)

### Parasites

It has been said of *dysodea* that "in common with its allies it is very liable to attack by ichneumons and they may have proved too much for it, although this must be largely surmise" (Jackson, 1946). However, the species was not listed by Bignell in his register of parasites affecting British Lepidoptera (Bückler, 1893); furthermore, the fluctuations of the moth do not correspond with those seasons when parasites were reported in unusually high or low numbers (Beirne, 1955), or with the great "wasp" years.

### Pesticides

In 1982 a single crop of lettuce was reported as having been sprayed 46 times with four different chemicals (Sunday Times, 5/8/84). But I understand from a local large scale commercial lettuce grower that the spraying of chemicals on lettuce only significantly began after the Second World War — too late to affect the small ranunculus.

### Pollution

Mention has already been made of vegetable growers being forced to move away from London because of air pollution and some Lepidoptera are affected by such contaminants (Beirne, 1947B). Atmospheric pollution, both smoke and sulphur dioxide is very high in the counties near London (Dobson, 1979), but the insect would have disappeared from these regions first and it is difficult to imagine the amount of pollution suffered by the fens and the south-west causing extinction.

### Disease

There is no evidence that disease played a part in this extinction, although climatic factors apart, it is difficult to obtain even circumstantial indications due to the lack of data. However, the insect was not listed in a world summary of published records of species having suffered from virus diseases (Hughes, 1957) or was unusually scarce in the years following those listed as being when disease was unusually prevalent in England (Beirne, 1955).

\*5 View Road, Peacehaven, Newhaven, Sussex.

### Summary

At the heart of this extinction lies the fact that, outside of the lettuce seed growing areas, *dysodea* was critically dependant upon the vagaries of the presence of bolted eating lettuce — not only did lettuce have to bolt for food to be available but it also had to be left for about six weeks to enable larvae to complete their growth successfully. Even at the present time, flowering lettuce can still sometimes be seen in commercial fields but they are few in number and are not allowed to stand long in mid-summer — the period of peak demand — when larvae feed; before many plants have bolted the whole field, together with the remains of the crop, is ploughed to enable the next in a quick succession of crops to be planted for maximum productivity. This was certainly the case before at least 1930 and it is likely that this was a more intensive regime precipitated by the need to compete with the then fresh flood of continental imports arriving over the last quarter of the 19th century and subsequently.

The insects strongholds were exclusively contained within those counties which grew lettuce for seed; here its disappearance was due to the dramatic drop in lettuce seed production, also due to the introduction of foreign imports, over the last quarter of the 19th century and subsequently. In those districts adjoining cities, especially London, the increasing and continual removal of the market-garden, due to the encroachment of house-building needed by the rocketing population, caused many local extinctions — again, especially over the last quarter of the 19th century and subsequently.

Wet summers probably weakened the moth, not surprisingly as it was a species at the edge of its European distribution here, sufficient enough to cause its disappearances in its southern and western outposts where it was always rare.

Of all the social, economic, commercial, and technical influences which must have affected *dysodea*. I could only find one which could have positively assisted the species — the growth of amateur gardening ; but even here, no doubt many a larva died under the heel of these perfection seeking individuals — and bolting lettuce would have been just as unwelcome.

### Conclusion

I believe *Hecatera dysodea* D. & S. became extinct in Britain because of the following uniquely coincidental factors — the introduction of intensive agricultural methods in the production of eating lettuce, the sudden dramatic decline in lettuce seed production, the constant upheaval of market-gardens near towns, and the occurrence of sequentially wet summers seriously affecting the species in areas where it was already at a climatic disadvantage.

### Acknowledgements

My thanks are due to Mr. R. F. Bretherton and Mr. B. Skinner for their kind assistance with records, to Dr. P. R. Dawson of A. L. Tozer Ltd., Mr. J. W. Moxon Smith of the Glasshouse Crops Research Institute, Mr. A. G. Johnson of the National Vegetable Research Station, Mr. L. J. Beaven of Hurst Gunson Cooper Taber Ltd., Mr. L. E. Watts of Unilever Research, and Mr. Mills of Curry Grant Ltd., for their expert opinions on *L. sativa*.

### References

- Anonymous, 1951. *Entomologist's Rec. J. Var.*, **63**: 296-297.  
 ----- 1953. *Entomologist's Rec. J. Var.*, **65**: 213.  
 Baker, R. R., 1970. Bird Predation as a Selective Pressure on the Immature Stages of the Cabbage Butterflies, *Pieris rapae* and *P. brassicae*. *J. Zool. Lond.*, **162**: 43-59.  
 Barrett, C. G. 1882. The Influence of Meteorological Conditions on Insect Life. *Entomologist's mon. Mag.*, **19**: 1-8.  
 ----- 1897. *The Lepidoptera of the British Islands*, **4**. London.  
 Beavington, F., 1965. Early Market Gardening in Bedfordshire. *Transactions of the Institute of British Geographers*, **37**: 91-100.  
 Beirne, B. P. A 1947 The Seasonal Abundance of the British Lepidoptera. *Entomologist* **80**: 49-53.  
 ----- 1947 B. The Effects of Human Activities on the Distribution and Abundance of the Lepidoptera. *Entomologist's Rec. J. Var.*, **59**: 37-42.  
 ----- 1955. Natural Fluctuations in Abundance of British Lepidoptera. *Entomologist's Gaz.*, **6**: 21-52.  
 Bretherton, R. F., 1951. Our Lost Butterflies and Moths. *Entomologist's Gaz.*, **2**: 211-240.  
 Brooks, C. E. P., 1926. *Climate Through the Ages*. E. Benn Ltd., London.  
 Buckler, W., 1893. *The Larvae of the British Butterflies and Moths*, **6**. Adlard, London.  
 Butcher, R. W., 1941. Suffolk. In: Stamp, L. D., (ed.), *The Land of Britain*. Geographical Publications, London.  
 Cameron, L.G., 1937 Hertfordshire. In: Stamp, L. D., (ed.), *The Land of Britain*. Geographical Publications, London.  
 Coppock, J. T., 1964. *An Agricultural Atlas of England and Wales*. Faber & Faber, London.  
 Culot, J., 1909-1913. *Noctuelles et Geometres d' Europe*, **1**.  
 Dobson, F., 1979. *Lichens*. Richmond Pub. C.  
 Firmin, J., et al., 1975. *A Guide to the Butterflies & Larger Moths of Essex*.  
 Fisher, F. J., 1935. Development of the London Food Market 1540 to 1640. *Econ. Hist. Rev.*, **5**: 54-55.

- Fryer, D. W., 1941. Huntingdon. In: Stamp, L. D., (ed.), *The Land of Britain*. Geographical Publications, London.
- Garrard, G. H., 1954. *A Survey of the Agriculture of Kent*. Royal Agricultural Society of England.
- Glenny, W. W., 1907. Market-Gardening: In: *Victoria County History of Essex*, 2. Constable, London.
- Gurney, J. H., & Russell, C., 1885. *The House Sparrow*. London.
- Hall, A. D., & Russell, E. J., 1911. *A Report on the Agriculture and Soils of Kent, Surrey and Sussex*. HMSO.
- Harwood, W., 1903. Lepidoptera. In: *Victoria County History of Essex*, 1. Constable, London.
- Heath, J., 1974. A Century of Change in the Lepidoptera. In: Hawksworth, D. L., *The Changing Flora and Fauna of Britain*, pp. 275-292. London.
- & Emmet, A. M., 1979. *The Moths and Butterflies of Great Britain and Ireland*, 9. Curwen, London.
- Hughes, K. M., 1957. An Annotated List and Bibliography of Insects Reported to have Virus Diseases. *Hilgardia*, 26: 597-629.
- Jackson, R. A., 1946. Causes for Seasonal Variation in the Numbers of Lepidoptera. *Proc. & Trans. S. L. Ent. & Nat. Hist. Soc.*, 1945-6: 43-51.
- Lamb, H. H., 1965. Britains Changing Climate. In: Johnson, C. G., & Smith, L. P., *The Biological Significance of Climatic Changes in Britain*. Symposia of the Institute of Biology, No. 14. Academic Press, London.
- L'homme, L., 1923-35. *Catalogue des Lepidopteres de France et de Belgique*, 1.
- Lindquist, K., 1960. On the Origin of Cultivated Lettuce. *Hereditas*, 46: 319-350.
- Manley, G., 1974. Central England Temperatures : monthly means 1659 to 1973. *Quarterly Journal of the Royal Meteorological Society*, 100: 389-405.
- Melbourne, R. W. L., 1940. Isle of Ely. In: Stamp, L. D., (ed.), *The Land of Britain*. Geographical Publications, London.
- Meteorological Office, 1915. Monthly Normals of Temperature, Rainfall, and Sunshine (1876/1881-1910). *British Meteorological and Magnetic Year Book*, 1913, part 1; Appendix 4, 260-263.
- 1952. *Climatological Atlas of the British Isles*. HMSO.
- Ministry of Agriculture & Fisheries, 1932. *Salad Crops*. Bulletin No. 55. HMSO.
- 1955. *Outdoor Salad Crops*. Bulletin No. 55. HMSO.
- Mosby, J. E. G., 1938. Norfolk. In: Stamp, L. D., (ed.), *The Land of Britain*. Geographical Publications, London.

- Nicholas, F. J., & Glasspoole, J., 1932. General Monthly Rainfall over England and Wales, 1727 to 1931. *British Rainfall*, 1931: 299-306.
- Omerod, E. A., 1889. Depredations of the House Sparrow. *Journal of the Royal Agricultural Society of England*, **25**: 343.
- Orwin, C. S., & Whetham, E. H., 1964. *History of British Agriculture*. Longmans, London.
- Perring, F. H., & Walters, S. M., 1976. *Atlas of the British Flora*. EP Publishing, Wakefield.
- Pettit, G. H. N., 1941. Cambridgeshire. In: Stamp, L. D., (ed.), *The Land of Britain*. Geographical Publications, London.
- Phillips, 1935. *Phillips Atlas of the British Isles*.
- Phillips, H., 1822. *History of Cultivated Vegetables*. Colburn, London.
- Pollard, E., 1979. Population Ecology and Change in Range of the White Admiral Butterfly *L. camilla* L. in England. *Ecol. Ent.*, **4**: 61-74.
- Pratt, C., 1983. A Modern Review of the Demise of *Aporia crataegi* L: The Black-veined White. *Entomologist's Rec. J. Var.*, **95**: 45-52, 161-166, 232-237.
- Prince, S. D., & Carter, R. N., 1977. Prickly Lettuce (*Lactuca serriola* L.) in Britain. *Watsonia*, **11**: 331-338.
- Rhind, W., 1860. *A History of the Vegetable Kingdom*. Blackie, London.
- Salisbury, E., 1964. *Weeds and Aliens*. New Naturalist.
- Scarfe, N. V., 1942. Essex. In: Stamp, L. D., (ed.), *The Land of Britain*. Geographical Publications, London.
- Stamp, L. D., 1936-1943. *The Land of Britain*. Geographical Publications, London.
- , 1962. *The Land of Britain, its Use & Misuse*. Longmans Green, London.
- & Willatts, E. C., 1941. Surrey. In: Stamp, L. D., (ed.), *The Land of Britain*. Geographical Publications, London.
- Stephenson, J., 1936. Berkshire. In: Stamp, L. D., (ed.), *The Land of Britain*. Geographical Publications, London.
- Watts, L. E., 1954. Synonymy in Lettuce Varieties. *Report of the National Vegetable Research Station, Wellesbourne*, 16-36.
- Webber, R., 1968. *The Early Horticulturists*. David & Charles, Worthing.
- Willatts, E. C., 1941. Middlesex & London Region. In: Stamp, L. D., (ed.), *The Land of Britain*. Geographical Publications, London.

Also consulted were the *Victoria County Histories*, volumes 1 & 2, of Norfolk, Suffolk, Cambridgeshire, Huntingdonshire, Hertfordshire, Middlesex, Essex, Surrey, Kent, Bedfordshire, Somerset, Herefordshire, Gloucestershire, Hampshire, Oxfordshire, Rutland, and Sussex.